National Aeronautics and Space Administration

NASASpacePlace

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News and Notes for formal and informal educators

The Space Place is a NASA website for elementary school-aged kids, their teachers, and their parents.

It's colorful! It's dynamic! It's fun!

It's rich with science, technology, engineering, and math content!

It's informal. It's meaty. It's easy to read and understand. It's also in Spanish. And it's free!

It has 130 (and counting) separate modules for kids, including hands-on projects, interactive games, animated cartoons, and amazing facts about space and Earth science and technology.

During 2011–2012, NASA's "Year of the Solar System" (one Martian year), several solar system missions will score major milestones. This issue, we focus on Jupiter and Saturn. NASA has intensely studied these gas giant planetary systems over the past couple of decades. And now, the adventure continues . . .

New on spaceplace.nasa.gov . . .

NASA plans to launch the Juno mission to Jupiter in August 2011. After a five-year journey, Juno will go into a very elongated Jupiter orbit. At its closest, Juno will pass just three thousand miles above the giant planet's clouds to find out whether this mysterious planet has a solid core, to measure the water and ammonia in its atmosphere, and to map its intense magnetic field.

"JunoQuest" is a new game on the Space Place that puts the player in the role of Juno taking these important measurements. In this fast-paced, colorful, and exciting game, players must quickly re-position the spacecraft to capture the required amount of each type of data, while dodging harmful radiation and preventing data "buffers" from overflowing. Play JunoQuest at http://tiny.cc/juno-quest .

Space Place en español

¿Cómo podemos conocer la temperatura de las nubes que cubren a Júpiter? How do we know the temperature of the cloud tops of Jupiter? Dr. Marc answers this question in both English and Spanish. To do so, he must first give a short and sweet introduction to the electromagnetic spectrum.

Of course, infrared is included, with an explanation of how scientists can measure an object's temperature by detecting the infrared light it emits. Doctors use similar technology to quickly take a person's temperature. What works for people works for objects in space, once you get the "thermometer" up above the atmosphere and away from the warmth of Earth. For a simple and informative reading in Spanish, check it out at http://tiny.cc/jupiter-sp.

Spotlight on the "First Annual Planet Awards"

They have awards shows and pageants for just about everything else, why not the planets of our solar system? "First Annual Planet Awards" booklet at http://tiny.cc/planetawards has the planets parading

across the page, one by one, and answering interviewer questions about their size, orbit, moons, and any other traits that make them stand out from all their "competitors." Richly illustrated, the booklet can be perused online as a Flash "flipbook," or viewed or printed as an Adobe Reader file. In the end, each planet gets its own special award, since each is deserving in its own special way. Venus wins for hottest, Mercury for fastest orbit, Saturn for most beautiful rings, and so on.

For the classroom

Gas giants are mighty strange objects to us rocky-planet-bound people. What, exactly, are they? If they are just gas, you obviously can't stand on their surface. But could you fly through them in an airplane? Our space expert, Dr. Marc, explains the answer to this question in a Podcast interview at http://tiny.cc/marcpod. Others of his Podcasts clearly answer equally perplexing questions. These Podcasts are in the Educators' section of The Space Place, and they will prepare you to answer at least a few of the gazillion questions kids have about space and the solar system.

Out-of-school time

The Space Place has infinite variations on the word find puzzle. Check out the Comet-related word-finds at http://tiny.cc/comet-words. You can create easy, medium or hard puzzles, and let kids do them online, or you can print them out to solve with a pencil. (In Windows Internet Explorer, right click on the puzzle window and select Print. In Apple Safari, select Print from the File menu.)

Dates to celebrate . . .

January 1, 1610: Galileo Galilei discovered Saturn, then on January 7 discovered Jupiter's four largest Moons. Read about the effects of the crazy tidal forces these four large moons and Jupiter itself exert on each other. http://tiny.cc/io-tides.

January 14, 2005: The Huygens Probe released from the Cassini spacecraft, plunges into the atmosphere of Saturn's moon Titan and lands on its surface. See video animations at http://tiny.cc/cassini-videos and learn what it found at http://tiny.cc/planet-weather ("Land o' Lakes").

January 24, 1986: The Voyager 2 spacecraft was the first to fly past Uranus, another gas giant beyond the orbit of Saturn. Find out more about Voyager 2's "Grand Tour" at http://tiny.cc/voyager-tour.

February 14, 2011: The Stardust-NExT spacecraft will fly by Comet Tempel I today and study it up close! Read about comets and play the "Tails of Wonder" game at tiny.cc/comet-tails.

February 17: "Introduce a Girl to Engineering Day." Watch a few of the Space Place Live cartoon interviews with successful women scientists and engineers who love their work. See tiny.cc/live994.

February 22: "Thinking Day." This would be a good day to learn about binary notation—the language of computers. You will never find a clearer, easier explanation than at http://tiny.cc/secret-code.

Have a question?

Don't forget our new "Ask the Space Place" page at http://tiny.cc/q-and-a. Encourage your students to post their questions using the link to Formspring.me, and we will answer as many as we can. Questioners can check back in a few days to see their question and answer on The Space Place.